TORQ Analysis of Industrial Machinery Mechanics to Welders, Cutters, and Welder Fitters

INPUT SECTION:

Transfer	Title	O*NET	Filters		
From Title:	Industrial Machinery Mechanics	49-9041.00	Abilities:	Importance LeveL: 50	Weight: 1
To Title:	Welders, Cutters, and Welder Fitters	51-4121.06	Skills:	Importance LeveL: 69	Weight: 1
Labor Market Area:	Maine Statewide		Knowledge:	Importance Level: 69	Weight: 1

OUTPUT SECTION:

Grand TORQ:	91

Ability TORQ		Skills TORQ		Knowledge TORQ	
Level	89	Level	87	Level	97

Gaps To Narrow if Possible

Ability	Level	Gap	Impt
Oral Expression	50	6	56
Arm-Hand Steadiness	51	3	75

Upgrade These Skills

Skill	Level	Gap	Impt
No Skills Upgrade Required!			

Knowledge to Add

Knowledge	Level	Gap	Impt
No Knowledge Upgrades Required!			

LEVEL and IMPT (IMPORTANCE) refer to the Target Welders, Cutters, and Welder Fitters. GAP refers to level difference between Industrial Machinery Mechanics and Welders, Cutters, and Welder Fitters.

ASK ANALYSIS

Ability Level Comparison - Abilities with importance scores over 50

Description	Industrial Machinery Mechanics	Welders, Cutters, and Welder Fitters	Importance
Arm-Hand Steadiness	48	51	75
Near Vision	50	50	65
Manual Dexterity	53	46	62
Control Precision	55	44	62
Oral Expression	44	50	56
Problem Sensitivity	44	39	56
Finger Dexterity	51	42	56
Multilimb Coordination	51	44	56
Oral Comprehension	50	46	53
Visualization	51	51	50

Selective Attention	50	44	50

Skill Level Comparison - Abilities with importance scores over 69

Description	Industrial Machinery Mechanics	Welders, Cutters, and Welder Fitters	Importance

Knowledge Level Comparison - Knowledge with importance scores over 69

Description	Industrial Machinery Mechanics	Welders, Cutters, and Welder Fitters	Importance

Experience & Education Comparison

Related Work Experience Comparison

Description	Industrial Machinery Mechanics	Welders, Cutters, and Welder Fitters
10+ years	7%	1%
8-10 years	8%	1%
6-8 years	8%	0%
4-6 years	14%	0%
2-4 years	17%	17%
1-2 years	15%	23%
6-12 months	3%	28%
3-6 months	13%	6%
1-3 months	0%	1%
0-1 month	0%	6%
None	11%	11%

Required Education Level Comparison

Description	Industrial Machinery Mechanics	Welders, Cutters, and Welder Fitters
Doctoral	0%	0%
Professional Degree	0%	0%
Post-Masters Cert	0%	0%
Master's Degree	0%	0%
Post-Bachelor Cert	0%	0%
Bachelors	7%	0%
AA or Equiv	1%	0%
Some College	11%	8%
Post-Secondary Certificate	36%	26%
High Scool Diploma or GED	24%	26%
No HSD or GED	17%	38%

Industrial Machinery Mechanics	Welders, Cutters, and Welder Fitters
Most Common Educational/Training Requirement:	
Long-term on-the-job training	Long-term on-the-job training
Job Zone Comparison	
3 - Job Zone Three: Medium Preparation Needed	2 - Job Zone Two: Some Preparation Needed
Previous work-related skill, knowledge, or experience is required for these occupations. For example, an electrician must have completed three or four years of apprenticeship or several years of vocational training, and often must have passed a licensing exam, in order to perform the job.	Some previous work-related skill, knowledge, or experience may be helpful in these occupations, but usually is not needed. For example, a teller might benefit from experience working directly with the public, but an inexperienced person could still learn to be a teller with little difficulty.
Most occupations in this zone require training in vocational schools, related on-the-job experience, or an associate's degree. Some may require a bachelor's degree.	These occupations usually require a high school diploma and may require some vocational training or job-related course work. In some cases, an associate's or bachelor's degree could be needed.
Employees in these occupations usually need one or two years of training involving both on-the-job experience and informal training with experienced workers.	Employees in these occupations need anywhere from a few months to one year of working with experienced employees.

Tasks

Industrial Machinery Mechanics	Welders, Cutters, and Welder Fitters
Core Tasks	Core Tasks

Generalized Work Activities:

- Repairing and Maintaining Mechanical Equipment - Servicing, repairing, adjusting, and testing machines, devices, moving parts, and equipment that operate primarily on the basis of mechanical (not electronic) principles.
- Inspecting Equipment, Structures, or Material - Inspecting equipment, structures, or materials to identify the cause of errors or other problems or defects.
- Handling and Moving Objects - Using hands and arms in handling, installing, positioning, and moving materials, and manipulating things.
- Getting Information - Observing, receiving, and otherwise obtaining information from all relevant sources.
- Performing General Physical Activities - Performing physical activities that require considerable use of your arms and legs and moving your whole body, such as climbing, lifting, balancing, walking, stooping, and handling of materials.

Specific Tasks

Occupation Specific Tasks:

- Analyze test results, machine error messages, and information obtained from operators in order to diagnose equipment problems.
- Clean, lubricate, and adjust parts, equipment, and machinery.
- Cut and weld metal to repair broken metal parts, fabricate new parts, and assemble new equipment.
- Demonstrate equipment functions and features to machine operators.
- Disassemble machinery and equipment to remove parts and make repairs.
- Enter codes and instructions to program computer-controlled machinery.
- Examine parts for defects such as breakage and excessive wear.
- Observe and test the operation of machinery and equipment in order to diagnose malfunctions, using voltmeters and other testing devices.
- Operate newly repaired machinery and equipment to verify the adequacy of repairs.
- Reassemble equipment after completion of inspections, testing, or repairs.
- Record parts and materials used, and order or requisition new parts and materials as necessary.
- Record repairs and maintenance performed.
- Repair and maintain the operating condition of industrial production and processing machinery and equipment.

Generalized Work Activities:

- Inspecting Equipment, Structures, or Material - Inspecting equipment, structures, or materials to identify the cause of errors or other problems or defects.
- Identifying Objects, Actions, and Events - Identifying information by categorizing, estimating, recognizing differences or similarities, and detecting changes in circumstances or events.
- Getting Information - Observing, receiving, and otherwise obtaining information from all relevant sources.
- Communicating with Supervisors, Peers, or Subordinates - Providing information to supervisors, co-workers, and subordinates by telephone, in written form, e-mail, or in person.
- Evaluating Information to Determine Compliance with Standards - Using relevant information and individual judgment to determine whether events or processes comply with laws, regulations, or standards.

Specific Tasks

Occupation Specific Tasks:

- Adjust electric current and timing cycles of resistance welding machines to heat metals to bonding temperature.
- Align and clamp workpieces together, using rules, squares, or hand tools, or position items in fixtures, jigs, or vises.
- Brush flux onto joints of workpieces or dip braze rods into flux, to prevent oxidation of metal.
- Clean equipment parts, such as tips of soldering irons, using chemical solutions or cleaning compounds.
- Clean joints of workpieces with wire brushes or by dipping them into cleaning solutions.
- Clean workpieces to remove dirt and excess acid, using chemical solutions, files, wire brushes, or grinders.
- Connect hoses from torches to regulator valves and cylinders of oxygen and specified gas fuels.
- Cut carbon electrodes to specified sizes and shapes, using cutoff saws.
- Dip workpieces into molten solder, or place solder strips between seams and heat seams with irons, to bond items together.
- Examine seams for defects, and rework defective joints or broken parts.
- Grind, cut, buff, or bend edges of workpieces to be joined to ensure snug fit, using power grinders and hand tools.
- Guide torches and rods along joints of workpieces to heat them to brazing temperature, melt braze alloys, and bond

- Repair and replace broken or malfunctioning components of machinery and equipment.
- Study blueprints and manufacturers' manuals to determine correct installation and operation of machinery.

Detailed Tasks

Detailed Work Activities:

- adhere to safety procedures
- adjust or set mechanical controls or components
- adjust production equipment/machinery setup
- align or adjust clearances of mechanical components or parts
- analyze operation of malfunctioning electrical or electronic equipment
- apply cleaning solvents
- assemble and install pipe sections, fittings, or plumbing fixtures
- assemble, dismantle, or reassemble equipment or machinery
- bend tubing or conduit
- braze metal parts or components together
- calibrate or adjust electronic equipment or instruments to specification
- conduct performance testing
- conduct tests to locate mechanical system malfunction
- control HVAC equipment
- coordinate production maintenance activities
- cut, bend, or thread pipe for gas, air, hydraulic, or water lines
- determine installation, service, or repair needed
- develop maintenance schedules
- diagnose mechanical problems in machinery or equipment
- fabricate, assemble, or disassemble manufactured products by hand
- identify base metals for welding
- identify properties of metals for repair or fabrication activities
- inspect machinery or equipment to determine adjustments or repairs needed
- install electrical conduit or tubing
- install electrical fixtures or components
- install electronic equipment, components, or systems
- install electronic power, communication, control, or security equipment or systems
- install equipment or attachments on machinery or related structures
- install industrial machinery or related heavy equipment
- install or replace meters, regulators, or

workpieces together.

- Heat soldering irons or workpieces to specified temperatures for soldering, using gas flames or electric current.
- Melt and apply solder along adjoining edges of workpieces to solder joints, using soldering irons, gas torches, or electric-ultrasonic equipment.
- Melt and apply solder to fill holes, indentations, and seams of fabricated metal products, using soldering equipment.
- Melt and separate brazed or soldered joints to remove and straighten damaged or misaligned components, using hand torches, irons or furnaces.
- Place solder bars into containers, and turn knobs to specified positions to melt solder and regulate its temperature.
- Remove workpieces from fixtures, using tongs, and cool workpieces, using air or water.
- Remove workpieces from molten solder and hold parts together until color indicates that solder has set.
- Select torch tips, flux, and brazing alloys from data charts or work orders.
- Smooth soldered areas with alternate strokes of paddles and torches, leaving soldered sections slightly higher than surrounding areas for later filing.
- Sweat together workpieces coated with solder.
- Turn dials to set intensity and duration of ultrasonic impulses, according to work order specifications.
- Turn valves to start flow of gases, and light flames and adjust valves to obtain desired colors and sizes of flames.

Detailed Tasks

Detailed Work Activities:

- adjust welding equipment
- apply cleaning solvents
- apply flux to workpiece before soldering or brazing
- braze metal parts or components together
- clean or degrease weld, or parts to be welded or soldered
- examine products or work to verify conformance to specifications
- fabricate, assemble, or disassemble manufactured products by hand
- file, sand, grind, or polish metal or plastic objects
- identify properties of metals for repair or fabrication activities
- load or unload material or workpiece into machinery
- monitor the quantity of assembly output
- move or fit heavy objects

related measuring or control devices
- install water or sewer treatment plant equipment
- install/connect electrical equipment to power circuit
- lubricate machinery, equipment, or parts
- maintain or repair industrial or related equipment/machinery
- maintain or repair small engines
- maintain or repair work tools or equipment
- maintain repair records
- maintain specialized manufacturing or commercial equipment or machinery
- maintain welding machines or equipment
- move or fit heavy objects
- observe or listen to machinery or equipment operation to detect malfunctions
- obtain information from individuals
- operate crane in construction, manufacturing or repair setting
- operate hoist, winch, or hydraulic boom
- operate pneumatic test equipment
- order or purchase supplies, materials, or equipment
- overhaul industrial or construction machinery or equipment
- overhaul power-generating equipment or machinery
- perform detailed welding techniques
- perform hydraulic plumbing
- perform safety inspections in industrial, manufacturing or repair setting
- position, align, or level machines, equipment, or structures
- program computer numerical controlled machines
- read blueprints
- read schematics
- read specifications
- read technical drawings
- read work order, instructions, formulas, or processing charts
- repair computer controlled manufacturing systems
- repair or adjust measuring or control devices
- repair or replace electrical wiring, circuits, fixtures, or equipment
- repair or replace malfunctioning or worn mechanical components
- repair plastics manufacturing equipment
- repair sheet metal products
- replace electronic components
- requisition stock, materials, supplies or equipment

- perform safety inspections in industrial, manufacturing or repair setting
- position, clamp or assemble workpiece prior to welding
- preheat metal before welding, brazing, or soldering
- read blueprints
- read production layouts
- read technical drawings
- read work order, instructions, formulas, or processing charts
- sharpen metal objects
- solder metal parts or components together
- understand technical operating, service or repair manuals
- use acetylene welding/cutting torch
- use braze-welding equipment
- use hand or power tools
- use soldering equipment

Technology - Examples

Analytical or scientific software
- Scientific Software Group Filter Drain FD

Calendar and scheduling software
- OmniFleet Equipment Maintenance Management

Computer aided design CAD software
- EZ Pipe software

Project management software
- Recordkeeping software

Tools - Examples

- Wrenches
- Anvils
- Bandsaws
- Slitters
- Motorized cutting torches
- Calipers
- Desktop computers
- Underwater electrode holders
- Files
- Gas flow measurement instruments
- Forklifts
- Current converters

- set up and operate variety of machine tools
- set up computer numerical control machines
- solder electrical or electronic connections or components
- solder metal parts or components together
- test electrical/electronic wiring, equipment, systems or fixtures
- test electronic or electrical circuit connections
- test mechanical products or equipment
- understand service or repair manuals
- understand technical operating, service or repair manuals
- use 2-cycle engine technology
- use acetylene welding/cutting torch
- use arc welding equipment
- use basic plumbing techniques
- use braze-welding equipment
- use combination welding procedures
- use control or regulating devices to adjust or maintain industrial machinery
- use electrical or electronic test devices or equipment
- use electronic calibration devices
- use hand or power tools
- use high voltage apparatus
- use knowledge of metric system
- use knowledge of welding filler rod types
- use machine tools in installation, maintenance, or repair
- use pipe fitting equipment
- use pneumatic tools
- use pollution control techniques
- use precision measuring devices in mechanical repair work
- use pressure gauges
- use robotics systems technology
- use soldering equipment
- use tube bending equipment
- verify levelness or verticality, using level or plumb bob
- weld together metal parts, components, or structures

Technology - Examples
Computer aided design CAD software
• Computer aided design CAD software
Computer aided manufacturing CAM software
• Extranet Machine Tools Suite
Data base user interface and query software
• Maintenance planning and control software

- Brazing equipment
- Goggles
- Grinding machinery
- Hand chipping hammers
- Clamps
- Temperature measurement instruments
- Electric overhead hoists
- Hydraulic presses
- Impact wrenches
- Hydraulic jacks
- Ladders
- Laser printers
- Laser welders
- Lathes
- Levels
- Light trucks
- Hydraulic truck lifts
- Metal inert gas MIG welders
- Metal markers
- Punches
- Computerized numerical control CNC programmable welding robot controllers
- Micrometers
- Milling machines
- Nibblers
- Personal computers
- Pipe cutters
- Plasma welders
- Air drills
- Air chisels
- Air scalers
- Buffers
- Power chippers

Facilities management software

- Maintenance management software

Industrial control software

- BIT Corp ProMACS PLC
- KEYENCE PLC Ladder Logic

Office suite software

- Microsoft Office

Spreadsheet software

- Microsoft Excel

Word processing software

- Microsoft Word

Tools - Examples

- Pliers
- Wrenches
- Compressors
- Alignment tools
- Ammeters
- Stud drivers
- Bandsaws
- Vises
- Block and tackle equipment
- Acetylene torches
- Boring machines
- Broaching machines
- Calipers
- Reciprocating machinery combustion analyzers
- Airhammer chisels
- Combination wrenches
- Cutting dies
- Desktop computers
- Equipment rollers
- Side cutting pliers
- Angled feeler gauges
- Files
- Power drills
- Power grinders
- Cutoff saws
- Steamers
- Waterproof gloves
- Angle finders
- Pinchbars
- Comealongs
- Ratchets
- Self-contained breathing equipment
- Respirator hose masks
- Welding lenses
- Scaffolding
- Scribers
- Shears
- Socket sets
- Soldering irons
- Wire feed rate measurement instruments
- Squares
- Straightedges
- Metal benders
- Dies
- Fillet weld gauges
- Electric pipe threaders
- Hand pipe threaders
- Tungsten inert gas TIG welding equipment
- Two way radios
- Ultrasonic welding equipment
- Arc voltage measurement instruments
- Arc welders
- Underwater electrodes
- Direct current DC sources

- Flow meters
- Forklifts
- Brazing equipment
- Shaping machines
- Grease guns
- Lapping wheels
- Brass hammers
- Hand pumps
- Gauges
- Allen wrenches
- Chain falls
- Impact wrenches
- Bearing heating ovens
- Jacks
- Ladders
- Laser measuring equipment
- Computer printers
- Engine lathes
- Transits
- Level gauges
- Channel lock pliers
- Magnetic retrievers
- Alignment scopes
- Rubber mallets
- Metal inert gas MIG welders
- Punches
- Programmable logic controllers PLC
- Inside micrometers
- Cutting machines
- Milling machines
- Multimeters
- Needlenose pliers
- Face shields
- Welding tips
- Welding robots
- Rod ovens
- Electrode wires
- Dive suits
- Winches
- Power wire brushes
- Wire cutters
- Overhead cranes
- Brakes

- Oscilloscopes
- Personal computers
- Facing machines
- Pipe wrenches
- Screw pitch gauges
- Plasma cutters
- Staging platforms
- Plumb bobs
- Airpowered descaling drills
- Pneumatic hammers
- Airpowered descaling turbines
- Jigs
- Power drills
- Cylindrical grinders
- Sanders
- Power saws
- Steam cleaning equipment
- Pressure gauges
- Hydrostatic testers
- Optical measuring equipment
- Pinchbars
- Hydraulic pullers
- Putty knives
- Ratchet sets
- Reamers
- Burnishing wheels
- Riveting machines
- Rulers
- Welding lenses
- Handsaws
- Scissor lifts
- Scrapers

- Phillips head screwdrivers
- Rigging
- Socket sets
- Soldering irons
- Cylindrical procedures squares
- Straightedges
- Bearing bridge gauges
- Vacuum lifts
- Strobe tachometers
- Tape measures
- Taps
- Space gauges
- Pipe threaders
- Aviation snips
- Emery wheels
- Tungsten inert gas TIG welding equipment
- Radial drills
- Utility knives
- Vacuum gauges
- Vibration analyzers
- Voltmeters
- Steel wedges
- Arc welders
- Welding shields
- Robotic teach pendants
- Tip dressing machines
- Electric welding equipment
- Electric rotary wire brushes
- Wire cutters
- Cranes
- Drill presses

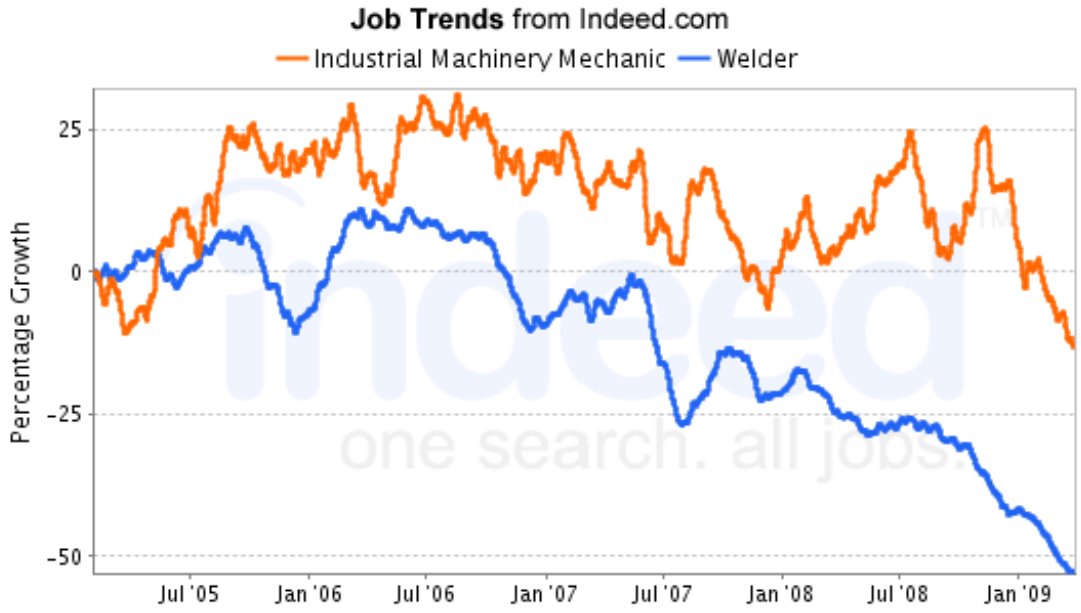
Labor Market Comparison

Description	Industrial Machinery Mechanics	Welders, Cutters, and Welder Fitters	Difference
Median Wage	$ 39,370	$ 38,030	$(1,340)
10th Percentile Wage	$ 28,150	$ 22,680	$(5,470)
25th Percentile Wage	N/A	N/A	N/A
75th Percentile Wage	$ 48,040	$ 46,190	$(1,850)
90th Percentile Wage	$ 56,740	$ 50,780	$(5,960)
Mean Wage	$ 40,830	$ 38,260	$(2,570)
Total Employment - 2007	990	1,610	620
Employment Base - 2006	1,021	1,691	670
Projected Employment - 2016	1,096	1,816	720
Projected Job Growth - 2006-2016	7.4 %	7.4 %	0.0 %
Projected Annual Openings - 2006-2016	25	49	24

National Job Posting Trends

Trend for Industrial Machinery Mechanics

Trend for Welders, Cutters, and Welder Fitters



Data from Indeed

Recommended Programs

Welder/Welding Technologist

Welding Technology/Welder. A program that prepares individuals to apply technical knowledge and skills to join or cut metal surfaces. Includes instruction in arc welding, resistance welding, brazing and soldering, cutting, high-energy beam welding and cutting, solid state welding, ferrous and non-ferrous materials, oxidation-reduction reactions, welding metallurgy, welding processes and heat treating, structural design, safety, and applicable codes and standards.

Institution	Address	City	URL
Eastern Maine Community College	354 Hogan Rd	Bangor	www.emcc.edu
Eastern Maine Community College	354 Hogan Rd	Bangor	www.emcc.edu
Eastern Maine Community College	354 Hogan Rd	Bangor	www.emcc.edu
Wasington County Community College	One College Drive	Calais	www.wccc.me.edu

Maine Statewide Promotion Opportunities for Industrial Machinery Mechanics

O*NET Code	Title	Grand TORQ	Job Zone	Employment	Median Wage	Difference	Growth	Annual Job Openings
49-9041.00	Industrial Machinery Mechanics	100	3	990	$39,370.00	$0.00	7%	25
49-9044.00	Millwrights	92	3	830	$41,280.00	$1,910.00	-12%	11
51-4111.00	Tool and Die Makers	88	3	160	$51,670.00	$12,300.00	-11%	2
51-4041.00	Machinists	87	3	1,860	$41,560.00	$2,190.00	4%	35
49-2094.00	Electrical and Electronics Repairers, Commercial and Industrial Equipment	87	3	440	$49,450.00	$10,080.00	-19%	15
51-4192.00	Lay-Out Workers, Metal and Plastic	86	2	180	$43,870.00	$4,500.00	-24%	3
51-4011.00	Computer-Controlled Machine Tool Operators, Metal and Plastic	86	2	720	$40,490.00	$1,120.00	6%	12
47-4021.00	Elevator Installers and Repairers	85	4	0	$50,960.00	$11,590.00	0%	0
49-2095.00	Electrical and Electronics Repairers, Powerhouse, Substation, and Relay	85	5	20	$60,790.00	$21,420.00	5%	1
49-9012.00	Control and Valve Installers and Repairers, Except Mechanical Door	85	3	170	$47,860.00	$8,490.00	-9%	3
49-3011.00	Aircraft Mechanics and Service Technicians	84	3	210	$44,280.00	$4,910.00	-2%	2

53-6051.07	Transportation Vehicle, Equipment and Systems Inspectors, Except Aviation	83	3	60	$42,890.00	$3,520.00	5%	2
47-2111.00	Electricians	82	3	2,910	$43,650.00	$4,280.00	1%	89
53-7021.00	Crane and Tower Operators	81	3	240	$41,940.00	$2,570.00	-2%	4
17-3023.01	Electronics Engineering Technicians	81	3	430	$45,180.00	$5,810.00	-20%	9

Top Industries for Welders, Cutters, and Welder Fitters

Industry	NAICS	% in Industry	Employment	Projected Employment	% Change
Architectural and structural metals manufacturing	332300	11.33%	46,347	52,658	13.62%
Agriculture, construction, and mining machinery manufacturing	333100	6.36%	26,009	25,834	-0.67%
Self-employed workers, primary job	000601	5.26%	21,505	24,372	13.33%
Motor vehicle body and trailer manufacturing	336200	5.12%	20,924	21,779	4.09%
Commercial and industrial machinery and equipment (except automotive and electronic) repair and maintenance	811300	4.38%	17,916	20,168	12.57%
Other general purpose machinery manufacturing	333900	3.83%	15,672	15,050	-3.97%
Boiler, tank, and shipping container manufacturing	332400	3.10%	12,686	12,161	-4.14%
Motor vehicle parts manufacturing	336300	3.03%	12,410	10,511	-15.31%
Machine shops	332710	3.03%	12,381	10,895	-12.00%
Other fabricated metal product manufacturing	332900	2.73%	11,163	10,522	-5.74%
Employment services	561300	2.58%	10,544	14,196	34.64%
Ship and boat building	336600	2.51%	10,285	12,246	19.07%
Ventilation, heating, air-conditioning, and commercial refrigeration equipment manufacturing	333400	2.39%	9,762	9,553	-2.14%
Nonresidential building construction	236200	2.03%	8,323	9,921	19.20%
Industrial machinery manufacturing	333200	1.31%	5,341	4,655	-12.85%

Top Industries for Industrial Machinery Mechanics

Industry	NAICS	% in Industry	Employment	Projected Employment	% Change
Commercial and industrial machinery and equipment (except automotive and electronic) repair and maintenance	811300	7.91%	20,611	25,083	21.70%
Motor vehicle parts manufacturing	336300	3.70%	9,644	8,829	-8.44%

Plastics product manufacturing	326100	3.58%	9,327	11,369	21.90%
Self-employed workers, primary job	000601	2.49%	6,497	7,960	22.52%
Electric power generation, transmission and distribution	221100	2.40%	6,265	6,626	5.77%
Converted paper product manufacturing	322200	2.30%	5,998	5,789	-3.49%
Pulp, paper, and paperboard mills	322100	2.25%	5,865	4,678	-20.23%
Animal slaughtering and processing	311600	2.25%	5,866	7,700	31.25%
Local government, excluding education and hospitals	939300	2.03%	5,296	6,841	29.19%
Fruit and vegetable preserving and specialty food manufacturing	311400	2.02%	5,259	5,484	4.27%
Basic chemical manufacturing	325100	1.87%	4,881	4,734	-3.02%
Federal government, excluding postal service	919999	1.81%	4,706	5,116	8.71%
Petroleum and coal products manufacturing	324100	1.46%	3,797	3,296	-13.18%
Semiconductor and other electronic component manufacturing	334400	1.39%	3,633	3,652	0.52%
Bakeries and tortilla manufacturing	311800	1.36%	3,536	4,154	17.47%